Explosion proof UL certified VoIP telephone

FernTel IP Z2 UL

c UL us

Manual

FHF FUNKE+HUSTER·FERNSIG

FHF BA 9620-51 09/12

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☞ **Note**

Please read the operating manual carefully before installing the device.

This is only a manual for the explosion proof UL certified version. The most important mounting and installation instructions are part of this document. For the complete configuration and operating of all features as well as the description of the special versions the knowledge of the complete manual is necessary.

The complete manual is attached on the CD.

Please check the contents of the box for completeness. ☜

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1 General

The FernTel IP Z2 UL telephone is an explosion proof UL certified version of the weatherproof FernTel IP / IP150 telephone with all its features. The operating manual is still valid, with the addition of the following items.

1.1 Operation

The FernTel IP Z2 UL telephone is used as a stationary device in areas potentially endangered by an explosive gas atmosphere.

1.2 Description

The telephone FernTel IP Z2 UL is allowed to be operated within Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.

The telephone is realized according to the following:

- Working environment temperature range:
    - -20°C ≤ Ta ≤ +55°C (-4°F ≤ Ta ≤ +131°F)
- Storage and transport temperature:
    - -25°C ≤ Ta ≤ +70°C (-13°F ≤ Ta ≤ +158°F)

2 Commissioning

For operation and commissioning, the application of standard IEEE 802.3af is compulsory.

The FernTel IP Z2 UL telephone must be connected to a LAN (Local Area Network) connection equipped with PoE (Power over Ethernet).

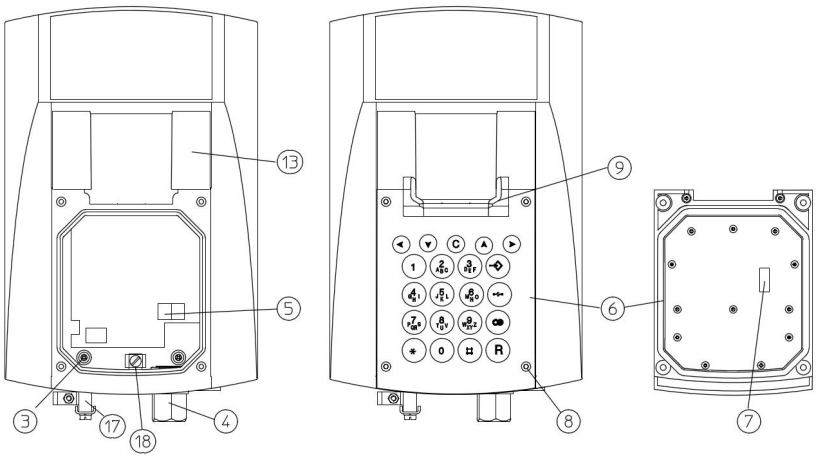
Contrary to the standard FernTel IP / IP150, the FernTel IP Z2 UL has no LAN cable plug bush. Also, there is no second LAN receptacle on the right-hand side of the telephone. Thus the LAN plug for the LAN cable is no longer part of the delivery. Instead of that a plug socket for cable mounting will be delivered.

2.1 Connecting

Connect the device using a RJ45 plug (socket) with the following normative PoE allocation:

RJ45 Plug			
PIN	Spare-Pair Supply	Phantom Supply	
1	Rx+	Rx+ / V-	Rx+ / V+
2	Rx-	Rx- / V-	Rx- / V+
3	Tx+	Tx+ / V+	Tx+ / V-
4	V+		
5	V-		
6	Tx-	Tx- / V+	Tx- / V-
7	V-		
8	V-		

Upon connecting the cable, please make sure the exposed conductors are placed in the plug connector and are securely fastened.



2.1.1 LAN Connection

Remove the keypad plate (Position 6) of the FernTel IP Z2 UL, guide the LAN cable through the cable gland (tube connection with ½" NPT thread)(Position 4) on the lower side of the telephone and secure the cable using the cable gland.

The FernTel IP Z2 UL delivery includes a bag with a connector socket with a cut-and clamp device for connecting the LAN cable with the short, 8 pin cable piece within the telephone.

Follow the instructions on the bag for shortening and placing the individual conductors and secure the LAN cable to the connector. Please pay attention to the coloured markings for the wiring standards T568A (A series) and T568B (B series). Then insert the plug of the short piece of cable (Position 5) into this connector until it clicks into place.

Plug the connector of the ribbon cable onto the pin contact strip on the keypad (Position 7), replace the keypad plate onto the telephone housing and tighten the four screws (Position 8).

2.1.2 Connection Potential Equalisation

For the potential equalisation are the terminals (Position 17 (external) and Position 18 (internal)) available. The stainless steel plate of the keypad is also connected with the potential equalisation inside the telephone. This connection must not be interrupted or removed. The ½" NPT tube connection for the cable gland is connected to the potential equalisation with a metal plate inside and outside of the telephone.

For this connection cables with a transversal section of 1.5 mm² to 4 mm² are allowed to be used only.

The potential equalisation connection of the telephone must be connected to the potential compensation at the place of installation, in order to avoid a dangerous electrostatic build-up in case of any electrostatic occurrence.

2.2 Setup

The configuration of the FernTel IP Z2 UL follows as described in the operating manual of the normal FernTel IP / IP150.

2.3 Operating Position

The telephone may be mounted on a wall or used as a desk telephone.

3 Information

3.1 Service

The telephone contains no serviceable parts.

3.2 Care and Maintenance

The telephone is maintenance-free. Still, if the operating area is highly contaminated by dust, fat, oil etc., the device should be cleaned from time to time.

The device may only be cleaned using a damp cloth in order to avoid electrostatic charging.

Never use sharp objects for cleaning.

During maintenance, check accessible seals for function, e.g. regarding possible damage or positioning. If the seals are damaged, operating the telephone is not allowed. Damaged seals must be replaced.

3.3 Disposal

The complete device should be disposed of as electronic waste. When the device is disassembled, plastics, metals and electronics components are to be disposed of separately. In every single case the national requirements and regulations for waste disposal must be observed.

3.4 Warning and Security Instructions

This device is an explosion and weatherproof telephone especially for use in a harsh industrial environment.

The following warning and security instructions must be respected:

- The telephone is build up in protection for use in Class 1, Division 2, Groups A, B, C and D or non-hazardous locations only. It must be connected and used with the required voltages only. The connection must be done in perfect order. The connection cable has to be mounted without risk of stumbling.

- It must be paid attention that the telephone, the connection cable, etc. must not be damaged. In a damaged state the use of the telephone is not allowed.

- For using the telephone the laws and the industrial regulations, the accident prevention, respectively the electrical regulations must be respected.

- For repairing only original exchange parts are allowed, which have to be changed professional. Other exchange parts may cause damages and the warranty will be lost.

- The required general purpose has to be respected. The device must be mounted on a closed rear panel in vertical mode or used as a desktop unit.

- A magnetic field with disturbing frequencies can adjust a disturbance of the acoustic quality. Pay attention to an acceptable installing place.

- For opening the device must be free of power.

- In opened state of the telephone dust must not attain into the device.

- For the impermeability of the housing necessary gasket respectively the protective cover at the upper part must not be damaged during mounting or dismounting.

- After repairing of the device for use in dust environment, the repaired parts have to be tested again.

- The speech speed hopper of the handset consists out of a not electrical conductive plastic material. It may be charging with high air speed dangerously. A cleaning of the speech speed hopper with pressed air is not allowed.

- Changes of the product for technical improvement are possible without announcement before.

- The telephone has to be included into the potential equalisation either with the internal earth connecting bolt of the metal plate or with the external earth connecting bolt at the housing. The potential equalisation must exist inside and outside of the explosion at risk area. The potential equalisation is necessary to support the explosion protection.

Caution

The equipment is suitable for use in Class I, Division 2, Groups A, B, C and D or non-hazardous locations only.

WARNING – EXPLOSION HAZARD

Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

WARNING – EXPLOSION HAZARD

Substitution of any components may impair suitability for Class I, Division 2.

- The device may be operated solely under the stated ambient conditions. Unfavourable ambient conditions can lead to damage of the device and thus present a potential danger for the user.

  Such unfavourable ambient conditions are:

  - Humidity of air too high (>75% rel., condensing)
  - Moisture and dust (pay attention to the degree of protection)
  - Flammable gases, vapours and solvents not covered by the type of protection for the device.
  - Too high ambient temperatures (> +55°C (> +131°F)).
  - Too low ambient temperatures (< -20°C (< -4°F)).

- During operation of the device the temperature must not exceed nor fall below the prescribed range of ambient temperatures. It is not allowed to operate the device with an additional cover.

- Make sure the wiring is voltage-free upon connecting or disconnecting the wires in the terminal room.

- If electrical connections must be carried through in the hazardous area, the enclosure must be opened and closed as follows:

    - Remove voltage from the device.
    - Loosen the fastening screws from the keypad insert.
    - Remove the keypad insert and unfasten the keypad cable.
    - Make the connections while the device is open.
    - When the work is done, plug the keypad back on, and place the keypad insert back on the lower part of the device.

  Make sure the seal is correctly positioned and in perfect working order. Then tighten the fastening screws in a diagonal pattern.

- Only blind plugs and cable glands as prescribed by the manufacturer may be used.

Should these points not be observed, the explosion protection of the device cannot be guaranteed. The device then poses a potential threat to the user's life and can cause the ignition of an explosive atmosphere.

4 Declarations and Approvals

4.1 UL Certificates FernTel IP Z2 UL

CERTIFICATE OF COMPLIANCE

Certificate Number	20120515-E304856
Report Reference	E304856-20120412
Issue Date	2012-MAY-15
Issued to:	FHF FUNKE + HUSTER FERNSIG GMBH GEWERBEALLEE 15-19, 45478 MUELHEIM A D RUHR GERMANY
This is to certify that representative samples of	TELEPHONES FOR USE IN HAZARDOUS LOCATIONS VoIP Telephone for indoor and outdoor use, Model FernTel IP Z2, Cat. No. 1124, followed by 1 or 3, followed by 14, followed by 0, 1, 2, or 7 for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	ANSI/ISA 12.12.01, 2011, Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations C22.2 No. 213-M1987 Non-incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations C22.2 No. 142-M1987, Process Control Equipment
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.
The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers; the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. Carney, Director, North American Certification Programs
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Certificate of Compliance

Certificate Number 20110927-E337081
Report Reference E337081-A1-UL
Issue Date 2011-SEPTEMBER-27

Underwriters Laboratories

Issued to: FHF FUNKE + HUSTER FERNSIG GMBH
GEWERBEALLEE 15-19
45478 MUELHEIM A D RUHR GERMANY

This is to certify that representative samples of INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS
VoIP Telephone for indoor and outdoor use
FernTel IP Z2

Have been investigated by Underwriters Laboratories in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: (Information Technology Equipment - Safety - Part 1: General Requirements) UL 60950-1
(Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07

Additional Information: See UL On-line Certification Directory at WWW.UL.COM for additional information.

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Look for the UL Listing Mark on the product

William R. Carney
Director, North American Certification Programs

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For questions, please contact a local UL Customer Service Representative at http://www.ul.com/global/eng/pages/corporate/contactus

5 Technical Data

Connection data	
Power supply	Power over Ethernet refer to IEEE 802.3af
Voltage	48V DC (Min. 44V, Max. 57V)
Power	3,5 W
	$P_{_PoE} \leq 4$ W
PoE	Class 0
Current	$I_{DC_PoE} \leq 100$ mA
Electrical ratings	Rated voltage: DC 48 V
	Max. input voltage: DC 57 V
Connection	RJ45 Ports (10/100 Mbit/s)
	LAN cable with 8 wires
	AWG 22 to 24 with single wire conductor
	AWG with multi wire conductor
Cable glands	NPT ½"
Diameter of the connecting cable	6 – 13 mm
Connection potential equalisation	1.5 – 4 mm^2
Ringing volume	Max. ca. 95 dB(A) in 1 m distance
Housing (Height x Width x Depth)	293 x 191 x 128 mm
Weight (telephone incl. telephone mount)	ca. 2.400 g
Display	128 x 64 Pixel
Keypad	Illuminated keypad with stainless steel plate
Operating utilization position	Table or vertical wall mounting
Handset	
Mouthpiece	Electret-foil microphone
Receiver inset	Dynamic receiver inset with magnetic field generator
Environmental conditions	
Ambient operating temperature	-20°C…+55°C (-4°F…+131°F) At a temperature below -10°C (14°F) there may be a delayed reaction of the LCD display

Transport and storage temperature	-25°C…+70°C (-13°F…+158°F)
Air humidity	Max. 75 % rel., condensed
Applied harmonized standards and regulations	– UL50/UL50E – UL60950-1 – UL60950-22 – ANSI/ISA 12.12.01-2011 – FCC Part 15
Control numbers	3MSC, 4HG9
File numbers	E304856, E337081
Enclosure type rating	Type 3
Hazardous location designation	Class I, Division 2, Groups A, B, C, D
Operating temperature code	T5
User interface	
Web-interface (administration)	English
Telephone (user menu)	16 languages adjustable

Subject to alterations
or errors

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